

C. REMARKS

In the Office Action of 19 March 2007, claims 10, 13, 16, 17, 18, 21-24, 28, and 29 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,462,256 to *Minick*; claims 10, 11, 16-18, 21-25, 28, and 29 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,158,437 to *Natwick*; claims 24 and 25 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,464,391 to *Devale*; and claims 12, 19, 20, 26, and 27 were rejected under 35 U.S.C. § 103 as being obvious in view of U.S. Patent No. 5,158,437 to *Natwick*, U.S. Patent No. 5,462,256 to *Minick* and U.S. Patent No. 5,464,391 to *Devale* in view of U.S. Patent No. 5,647,852 to *Atkinson* and U.S. Patent No. 4,665,943 to *Medvick*.

In response claims 17-23 have been amended; the remaining rejections are respectfully traversed

The Office Action has maintained the rejection of claims 10, 13, and 16 under 35 U.S.C. § 102 as anticipated by U.S. Patent No. 5,462,256 to *Minick* (“*Minick*”) and claims 10, 11, and 16 under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 5,158,437 to *Natwick* (“*Natwick*”).

The Office Action again points to “Col 4 line 17” in arguing that *Minick*’s diaphragm is preloaded. In fact, all that *Minick* teaches is that the diaphragm is shaped the same as the “face elliptic member 43”; nothing is said about preloading:

“Elastomeric member 16 is a molded flexible elastomeric member also somewhat elliptic in configuration, which conforms generally to the shape of the face elliptic member 43 at the underside of upper face 38 of face member 12.”

(*Minick*, Column 4, lines 15-19)(encompassing the Office Action’s cited line 17).

Likewise, the Office Action again points to “Col 21 line 8” in arguing that *Natwick*’s diaphragm is preloaded. A review of this citation reveals no such teaching:

“In FIG. 17, a cross-sectional plan view showing the fluid passages behind flexible membrane 340 illustrates the fluid flow path through cassette 300. Fluid entering inlet port 306 flows through an inlet passage 342 and through an entry port 344 at the bottom center of a proximal pressure chamber 346. Proximal pressure chamber 346 is, of course, disposed behind flexible membrane 340 in the area defined by proximal pressure sensor port 324. A sealing ridge 348 defines the perimeter of proximal pressure chamber 346 and each of the other chambers and passages within cassette 300. Flexible membrane 340 is trapped between the top of

sealing ridge 348 and the back surface of front panel 304, forming a seal that prevents fluid leakage from these chambers and passages.”

(*Natwick*, Column 21, lines 1-15)(encompassing the Office Action’s cited line 8).

The Office Action argues that since the Specification does not contain a definition of the term “preload”, “the examiner takes the broadest reasonable interpretation to one of ordinary skill in the art and holds that any diagram which is in contact or comes into contact with the reciprocating pump actuator would be preloaded”. This position is respectfully traversed.

The term “preload” is a common technical term known by one of ordinary skill in the art as something other than “coming into contact with”. Merriam Webster defines the verb “load” as “to put a load in or on <load a truck>”. <http://www.m-w.com/cgi-bin/dictionary>. The noun “load” is defined as:

“2 a : a mass or weight supported by something <branches bent low by their load of fruit> b : the forces to which a structure is subjected due to superposed weight or to wind pressure on the vertical surfaces; *broadly* : the forces to which a given object is subjected”

Id. The prefix “pre” means:

“a (1) : earlier than : prior to : before <*Precambrian*> <*prehistoric*> (2) : preparatory or prerequisite to <*premedical*> b : in advance : beforehand <*precancel*> <*prepay*>”.

Id.

Thus, in this context the term “preloaded” is known to mean, “applying the force of the reciprocating pumping actuator to the diaphragm in advance of the initiation of the pumping motion”.

For this reason, neither *Minick* nor *Natwick* anticipate claims 10, 11, 13, and 16 and the rejection of claims 10-13 and 16 should be withdrawn.

In addition, the Office Action has maintained the rejection of claims 17, 18, and 21-23 under 35 U.S.C. § 102 as anticipated by *Minick*; and claims 17, 18, and 21-23 under 35 U.S.C. § 102 as being anticipated by *Natwick*.¹

¹ While the Office Action lists *Natwick* as anticipating claims 17, 18, and 21-23 under 35 U.S.C. § 102, nowhere is an allegation made that *Natwick* shows a tab receiving groove.

The Office Action argues that “snaps and tabs are structurally equivalent as to which by the applicant”. This, however, misses the point: it is not the tabs of the present invention that claims 17-23 are directed but rather a “groove” that receives the tabs. The Specification describes just some of the advantages of this:

“[0050] The groove 87 engagement provides a two phased camming mechanism. In the first portion, the cassette 34 is pulled towards the plunger of the receiving cavity 73 to insure the proper orientation. In the second portion, the cam includes a plain member that is used to insure that the cassette 34 is not "jiggled" out of position during use. Additionally, the tabs are preferably designed on the collar 71 while the grooves 87 are preferably designed on the cassette 34. Because in the preferred embodiment the collar 71 is metal while the cassette 34 is plastic, placement of the tabs on the collar 71 and the groove 87s on the cassette 34 helps insure structural integrity given the forces that under which the tabs are placed.

“[0051] Additionally, the tab in groove 87 arrangement between the cassette 34 and the socket 33 allows only a single engagement orientation of the socket 33 and the cassette 34. This insures that the socket 33 and the cassette 34 are in the proper orientation for pumping action. The proper orientation of the cassette 34 and pump 14 is further confirmed to the user by use of an indicator line 88 on the collar 71 that aligns with the tab 104 when the cassette 34 is secured in the proper position. In addition, as explained below an audible click is generated when the cassette 34 is secured in the proper position.”

Nevertheless, claims 17-23 have been amended to specify that a tab receiving recess is connected with the tab-receiving groove. For this reason the rejection of claims 17-23 should be withdrawn.

The Office Action maintained its rejection of claims 24 and 25 under 35 U.S.C. § 102 as anticipated by U.S. Patent No. 5,464,391 to *Devale* (“*Devale*”). As pointed out in the prior Response to Office Action, in contrast to the cassette of the present invention the cassette of *Devale* is used with a rotary-type pump and not a reciprocating pump as in the present invention. Thus, the cassette of *Devale* does not include valves; rather, the rotary-type pump of *Devale* has an inlet 28 and an outlet 34 – *no valves*:

“These front and rear halves 60 and 62 of the cassette housing 59 define an internal cavity or flow passage way 64 between the inlet 28 and the outlet 34. The flow passage way 64 includes several segments. As mentioned above, the inlet 28 connects to the source of sterile water 18. Referring to FIG. 4, the flow passage way 64 includes a first or inlet segment 66 which extends from the inlet 28 to a circular shaped segment 68. In a preferred embodiment, the first segment

66 is formed of three arcuate shaped flow passages that extend through the front half 60 of the cassette housing 59.”

(*Devale*, Column 4, lines 22-32)(encompassing the Office Action’s cited line 26).

For this reason *Devale* does not anticipate claims 24 and 25.

In addition, claims 24, 28, and 29 were rejected under 35 U.S.C. § 102 as being anticipated by *Minick*. While *Minick* does have a series of ridges, it does not teach the presently claimed constantly graduated increasing thickness dimension:

“Elastomeric member 16 includes a diaphragm 17 having a central plunger engaging diaphragm portion 44 and sensor engaging diaphragm portions 45, 46 at opposite ends of portion 44. An outer peripheral ridge 47a of member 16 and a second peripheral ridge 47c, which is inset from ridge 47a and somewhat lower in height define a groove 47b therebetween. The elastomeric member 16 is symmetric with respect to its upper and lower surfaces to define similar peripheral ridges 47a and 47c with a similar peripheral groove 47b therebetween, on the underside of the elastomeric member. Ridge 47a, groove 47b and ridge 47c encompass diaphragm portions 44, 45 and 46. An end tab 48 is integrally molded into the elastomeric member 16 at a distal end thereof to ensure correct placement of the member in the cassette 10 during assembly.”

(*Minick*, Column 4, lines 20-32)(encompassing the Office Action’s cited lines 24-35).

For this reason *Minick* does not anticipate claims 24, 28, and 29.

In addition, claims 24, 25, 28, and 29 were rejected under 35 U.S.C. § 102 as being anticipated by *Natwick*. The Office Action points to “Fig 18,19, Col 21 lines 21-28” in arguing that the “diaphragm has a graduated cross-sectional thickness dimension”. Initially, the claim language is not “a graduated cross-sectional thickness” but rather “a constant graduated cross-sectional thickness”. Once again, the cited language is discussing the ridges that isolate the cracking channel, not the diaphragm:

“A connecting passage 350 leads from proximal pressure chamber 346 into an outer channel 352, which is disposed behind inlet valve port 320. An inner ridge 354 separates outer channel 352 from a cracking chamber 356 that is disposed in the center of inlet valve port 320. As shown in FIGS. 18 and 19, inner ridge 354 is slightly lower in elevation than sealing ridge 348 and includes a nib 378 centered on its top surface. Sealing ridge 348 connects to inner ridge 354 and extends in an incline down to the lower elevational level of inner ridge 354 at the opening to a connecting passage 358. Connecting passage 358 leads into a pumping chamber 360, disposed behind plunger port 330.”

(*Natwick*, Column 21, lines 16-28)(encompassing the Office Action's cited lines 21-28). And it is still respectfully not understood how the depiction of the diaphragm of *Natwick* in Figures 18 and 19 shows a graduated cross-sectional thickness dimension.

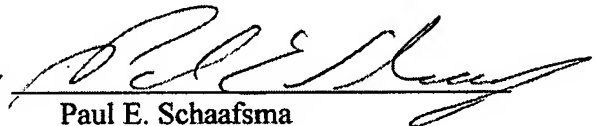
Thus, the rejection of claims 24-28 should be withdrawn.

Therefore, it is respectfully submitted that all of the claims recite patentable subject matter and are in condition for allowance. Accordingly, favorable reconsideration and allowance of the application is respectfully requested.

The Commissioner is authorized to charge any deficiency in fees or credit any overpayment to Deposit Account No. 50-0256. A duplicate copy of this correspondence is enclosed for such purpose.

Respectfully submitted,

Date April 27 2007

By 

Paul E. Schaafsma
Attorney for Applicant
Registration No. 32,664
312.664.0906 phone
312.664.0963 facsimile